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Handbook of PEDIATRIC DENTISTRY

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Fifth Edition

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Handbook of Pediatric Dentistry

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CHAPTER 1

The philosophy of paediatric dentistry: What is paediatric dentistry?

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CHAPTER OUTLINE

What is paediatric dentistry?

Paediatric dentistry is a specialty based not on a particular skill set, but rather encompassing all dentistry's technical skills against a philosophical background of understanding child development in health and disease. This latest edition of the handbook emphasizes again the broader picture in treating children (Appendix J). A dental visit is no longer just a dental visit; it should be regarded as a 'health visit'. We are part of the team of health professionals who contribute to the well-being of children, both in an individual context and at the wider community level. Children often slip through childhood to adolescence seemingly in the blink of an eye, and family life is more pressured and demanding. Commonly, children spend more time on social media than

Figure 1.1 The dental visit should be a positive experience. Children with special needs may present different challenges in their care; however, their involvement and joy are the greatest reward.

interacting directly with family and friends, and more than ever, the major influences on their lives come from outside the family.

The pattern of childhood illness has changed, and, with it, clinical practice. Children presenting for treatment may have survived cancer, may have a well-managed chronic disease or may have significant behavioural and learning disorders (Figure 1.1). There are increasing, sometimes unrealistic, expectations among parents/carers that the care of their children should be easily and readily accessible and pain-free and result in flawless aesthetics.

Caries and dental disease should be seen as reflective of the family's social condition, and the dental team should be part of the community.

> *Your [patients] don't have to become your friends, but they are part of your social context and that gives them a unique status in your life. Treat them with respect and take them seriously and your practice will become to feel part of the neighbourhood, part of the community.*
>
> (HUGH MACKAY, PSYCHOLOGIST, SOCIAL RESEARCHER AND NOVELIST)

In the evolving dynamics of dental practice, we feel that it is important to change, philosophically, the traditional 'adversarial nature' of the dental experience. It is well recognized that for too many, the dental experience has been traumatic. This has resulted in a significant proportion of the adult population accessing dental care only episodically, for the relief of pain. Thus, it is vital to see a community, and consumer, perspective in the provision of paediatric dental services. The successful practice of paediatric dentistry is not merely the completion of any operative procedure but also ensuring a positive dental outcome for the future oral health behaviour of that individual and family. To this end, an understanding of child development – physical, cognitive and psychosocial – is paramount. The clinician must be comfortable and skilled in talking to children, and interpersonal skills are essential.

Patient assessment: history

A clinical history should be taken in a logical and systematic way for each patient and should be updated regularly. Thorough history-taking is a skill. It may be time consuming and requires practice. However, it is an opportunity to get to know the child and family. Furthermore, the history facilitates the diagnosis of many conditions, even before the clinical examination. There are often specific questions pertinent to a child's medical history that will be relevant to their management, thus it is desirable that parents be present. The understanding of medical conditions that can compromise treatment is essential, and this will be expanded on in later chapters. Be aware that the parent(s) or carer(s) may be unaware of the full medical and/or social history of the child. This may be the case in those children who are adopted or are the offspring of differing social arrangements.

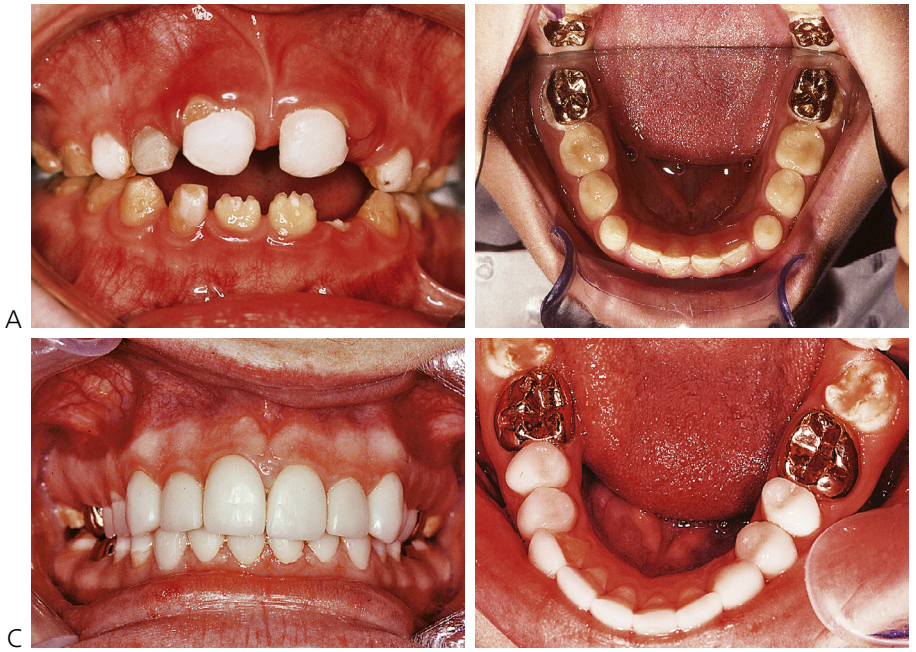

Figure 11.37 (A) Not all cases using composite resin are successful. With progressive eruption of the teeth, it is difficult for the patient to keep the gingival margins clean and the restoration may therefore fail. (B) Cast gold onlays are useful to protect the occlusal surfaces. No preparation of the crown was performed. (C, D) Onlays, veneers and composite crowns were cemented with composite luting cement.

possible, but it is difficult to predict how useful this information would be to an affected individual or family. Counselling may be helpful in some circumstances, provided it is given by someone with the appropriate training.

CLINICAL HINTS: BONDING TO ABNORMAL ENAMEL

- Acid-etch composite resin seems to bond more successfully to hypoplastic enamel than to hypomineralized enamel.
- In severely affected dentitions, it is preferable to place preformed metal crowns on primary molar teeth very early (e.g., at around 3–4 years of age) to preserve the vertical dimension and allow maximal eruption of the first permanent molar.
- Cast metal (precious or base-metal) onlays on suitable permanent posterior teeth have the best long-term clinical success.
- Regular radiographic examination is required to detect early caries.

Disorders of dentine

DENTINOGENESIS IMPERFECTA (OMIM 125490) (Figure 11.38)

Dentinogenesis imperfecta is an inherited disorder of dentine, which may or may not be associated with osteogenesis imperfecta. The term 'hereditary opalescent dentine' is sometimes used for the isolated condition. Both osteogenesis imperfecta and dentinogenesis imperfecta are transmitted as autosomal dominant traits and are clinically indistinguishable dentally, although they have a different genetic basis. Osteogenesis imperfecta is caused by mutations in the type I collagen

Figure 11.38 Manifestations of dentinogenesis imperfecta. (A) Dentinogenesis imperfecta. Dark discolouration of the crowns which appear normal in size and shape. (B) Severe attrition in the primary dentition in a case of dentinogenesis imperfecta. (C) Blue sclera associated with osteogenesis imperfecta. (D) Primary dentition in a child with osteogenesis imperfecta.

genes (e.g., *COL1A1*, *COL1A2*) and dentinogenesis imperfecta to mutations in the dentine sialophosphoprotein I gene (*DSPP*). Some individuals and families with osteogenesis imperfecta may have clinical evidence of dentinogenesis imperfecta, but in other families there may be variable expression of the trait. Within these families, some individuals may have abnormal dentine, while others are clinically unaffected as far as the teeth are concerned. However, because of the same collagen defect, all such children with osteogenesis imperfecta may have abnormal dentine, albeit at a subclinical level. The possibility of osteogenesis imperfecta should be considered in children presenting with dentinogenesis imperfecta and investigated by measurement of bone density if necessary. The presence of blue sclera or a history of bone fractures should alert the clinician to osteogenesis imperfecta.

Dental manifestations

- Amber, grey to purple-bluish discolouration or opalescence (Figure 11.38).
- Pulpal obliteration (Figure 11.39).
- Relatively bulbous crowns.
- Short, narrow roots.
- Enamel may be lost after tooth eruption, exposing the soft dentine, which rapidly wears. This is probably because of inherent weakness in the dentine rather than because of an enamel defect or abnormality at the dentinoenamel junction.
- Mantle dentine appears normal.
- Circumpulpal dentine is poorly formed with abnormal direction of tubules. Small soft tissue inclusions represent remnants of pulpal tissue.